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ABSTRACT

Data from "The Condition of Education, 1997" are used to show how changes over time in the composition of students in terms of factors such as student English language proficiency, family income, parents' education, and family structure affect the social context of education. This report traces associations between these student-level social factors and different indicators of educational access and progress. For each factor, the report shows changes over time and how the factor affects various racial and ethnic groups. The following factors are considered: (1) student background; (2) changes in the social background of children; (3) the social context of public schools; (4) learning environment in high and low poverty schools; and (5) resource equity across high and low poverty schools. Findings indicate: the structure of families is shifting away from the two-parent family, and the percentage of children of minority background is increasing, as is the percentage of children who have difficulty speaking English; median family income has been relatively stagnant over the past 25 years, and the poverty rate has changed very little; and Black and Hispanic children are still more likely to live in poverty, and to attend schools with a high level of poverty. On the positive side, more children live in home with more educated parents than a few decades ago, and parent education level is a strong predictor of student achievement. Changes in social context present challenges schools must address to enhance their effectiveness and ensure educational progress. (Contains nine figures and seven tables.) (SLD)

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NATIONAL CENTER FOR EDUCATION STATISTICS

Findings from
THE CONDITION OF EDUCATION 1997

NO. 10

THE SOCIAL CONTEXT OF EDUCATION

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September 1997

The text in this booklet was written by Beth Aronstamm Young, Pinkerton Computer Consultants, Inc. and Thomas M. Smith of the Data Development and Longitudinal Studies Group of NCES and appears in ***The Condition of Education, 1997.*** *Rebecca Pratt, Ginger Rittenhouse, Andrea Livingston, Karyn Madden, and Barbara Kridl edited the text, and Leslie Retallick, Don Eike, and Mary Sukkestad designed the graphics and layout.*

The Social Context of Education

Children in the United States come from a variety of family situations, income strata, and cultural backgrounds. As a result, our Nation's schools are faced with unique challenges as they strive to provide equal educational opportunities to all students.[1] Factors such as family income, family structure, and parents' education have been shown to influence a child's educational opportunities. Today, of the 4 million babies born each year, nearly one out of eight is born to a teenage mother, one out of four to a mother with less than a high school education, almost one out of three to a mother who lives in poverty, and one out of four to an unmarried mother.[2] These conditions have been shown to be associated with children experiencing problems such as repeating a grade, requiring special education services, and being suspended and dropping out of school.[3]

Students from racial/ethnic minority backgrounds and low income families are more at risk for poor school outcomes and are becoming an increasing share of the student population.[4] Since the mid-1960s, studies have linked the educational disadvantage of minority students to a combination of out-of-school factors, many of which center on family characteristics, such as poverty and parents' education.[5] The data contained in this report highlight similar findings.

Changes over time in the composition of students in terms of factors such as student English language proficiency, family income, parents' education, and family structure affect the social context of education. In the essay that follows, associations between these student-level social factors and different indicators of educational access and progress are reviewed. For each student background factor, the essay will point out how these factors have changed for families and children over time, as well as how they affect various racial/ethnic groups.

The social context of schooling is also a function of how students with various characteristics are distributed across schools. The last half of this essay examines differences in school climate and human and financial resources in high and low poverty schools. The data on these factors reflect changing conditions that schools must confront in order to be effective. In order to provide equal educational opportunity, policymakers must be aware of differences in the background of students, as well as differences in the climate and resources of schools.

Student Background

Social background factors such as race/ethnicity, limited English proficiency, family income, parental education, and family structure are associated with various levels of educational access and different educational outcomes. For example, differences in preprimary enrollment, incidence of early childhood academic and behavioral problems, level of student achievement, and the likelihood of dropping out of school or going on to college after graduation are each associated with various social background factors. Such factors are interrelated, however, and must be examined jointly when trying to understand the effect of any single factor on education. For example, a recent study showed that variation in student performance associated with family structure disappeared when other factors, such as family income, family size, and parents' education level, are taken into account.[6] Several examples of the association between social and educational access and outcomes contained in this report are summarized below.

- **Poverty is negatively associated with enrollment rates in early childhood education programs.**

Differences in enrollment rates in early childhood education across levels of poverty may indicate differential access to this

level of education. For example, in 1995, 3- and 4-year-olds from families who were classified as poor (a measure of a family's composition and income) were less likely to be enrolled in preprimary education than 3- and 4-year-olds from families who were classified as non-poor (24 and 52 percent compared to 42 and 64 percent, respectively).[7]

- **Children in single parent families are more likely to experience early school problems and are less likely to participate in early literacy activities than children in two parent families.**

Family structure is associated with children's early literacy activities and early school problems. In 1995, 3- to 5-year-olds living with two biological or adoptive parents were more likely to have been read to three or more times a week, to have been told a story once a week, or to have visited the library in the previous month than 3- to 5-year-olds living with one biological or adoptive parent.[8] Moreover, first- and second-graders aged 6–8 living with one biological or adoptive parent were more likely to experience academic problems and to have their parents report that they were academically below the middle of their class than those students living with two biological or adoptive parents.[9]

- **Parents' education level is strongly associated with student achievement.**

In general, children of parents with higher levels of education perform better, on average, on assessments of student achievement. For example, in 1994, 13- and 17-year-olds whose parents had at least some college had higher mathematics and science proficiency scores than those whose parents did not finish high school. Parents' educational attainment was positively related to reading[10] and writing[11] scores as well.

- **Difficulty speaking English is associated with dropping out of school.**

In 1995, of those 16- to 24-year-olds who spoke a language other than English at home, the dropout rate of those who had difficulty speaking English (44 percent) was substantially more than that of those who did not have difficulty speaking English (12 percent).[12]

- **High school graduates from high income families are more likely than high school graduates from low income families to go directly to college.**

High school graduates from low income families were more likely to go directly to college in 1995 than in 1972.[13] Still, in 1995, 34 percent of high school graduates from low income families went directly to college, compared to 83 percent of those from high income families.[14]

Changes in the Social Background of Children

The learning environment of schools can be enhanced by what students with a variety of backgrounds and interests bring with them; however, heterogeneity of student ability levels and preparation for school may create increased challenges for schools to meet the needs of students from different social backgrounds. This section describes changes in the social background characteristics of children in general, as well as of children from various racial/ethnic groups.

Racial/Ethnic Makeup of Students

A greater racial/ethnic diversity of students is related to more heterogeneity of language and culture in our Nation's schools. Many minority students come from poverty or non-English language backgrounds and may be at greater risk of not succeeding in school than other children.

- **Minority students are projected to make up an increasing share of the school age population during the coming decades.**

Racial and ethnic diversity has increased substantially in the United States in the last two decades, and is projected to increase even more in the decades to come. In 1995, 67 percent

Percentage change in the population of children aged 5–17, by race/ethnicity

	Percentage change	
Race/ethnicity	1993 to 2000	2000 to 2020
White		
Aged 5–13	2.9	-11.2
Aged 14–17	10.1	-10.3
Black		
Aged 5–13	12.9	15.4
Aged 14–17	11.5	20.0
Hispanic		
Aged 5–13	29.8	47.0
Aged 14–17	23.6	60.6
Other		
Aged 5–13	32.5	67.2
Aged 14–17	45.1	73.3

SOURCE: NCES, *Youth Indicators 1996*, Indicator 2.

of U.S. children aged 5–17 were white, 15 percent were black, 13 percent were Hispanic, and 5 percent were Asian/Pacific Islander, American Indian, and Alaskan Native.[15] Between 2000 and 2020, the number of minority children aged 5–17 is projected to grow much faster than the number of white children. Between 2000 and 2020, it is projected that there will be 61 percent more Hispanic children aged 14–17 and 47 percent more Hispanic children aged 5–13. The numbers of Asian/Pacific Islander, American Indian, and Alaskan Native children aged 14–17 is projected to increase by 73 percent, while the number of those children aged 5–13 is projected to grow by 67 percent. In contrast, between 2000 and 2020, the number of white children aged 5–13 is projected to decrease by 11 percent, and the number of white children aged 14–17 is projected to decrease by 10 percent.

Difficulty Speaking English

Children who speak languages other than English at home and who have difficulty speaking English face great challenges progressing through school. By law, school systems across the United States must provide services for children who have difficulty speaking English. Difficulty speaking English is most common among immigrant children and the U.S.-born children of immigrants.

- **The percentage of children having difficulty speaking English increased in recent years.**

Between 1979 and 1989, the percentage of children aged 5–17 in the United States who spoke a non-English language at home and who had difficulty speaking English increased from 3 to 5 percent and remained at 5 percent between 1989 and 1995. Hispanic children were more likely to have difficulty speaking English than their white or black peers. In 1995, 31 percent of Hispanic children spoke a non-English language at home and had difficulty speaking English, compared to 1 percent each of

black and white children. The percentage of Hispanic children who spoke a non-English language at home and who had difficulty speaking English increased slightly between 1979 and 1995.[16]

Percentage of children aged 5–17 who spoke a language other than English at home and who spoke English with difficulty,* by race/ethnicity: 1979, 1989, 1992, and 1995

Race/ethnicity	1979	1989	1992	1995
Total	**3**	**5**	**5**	**5**
White	1	1	1	1
Black	—	1	2	1
Hispanic	29	28	30	31

—Too few sample observations for a reliable estimate.

*Respondents were asked to rate the child's ability to speak English using the following scale: "not at all," "not well," "well," or "very well." All those who reported less than "very well" were categorized as having difficulty speaking English.

SOURCE: U.S. Department of Commerce, Bureau of the Census, October Current Population Surveys.

Socioeconomic Status

Many studies have found that students' socioeconomic status (SES) is associated with their likelihood of success in school. Whether measured by parents' income, occupational prestige, or level of education, students from low SES families are more likely to experience school failure than those from higher SES families.[17] Differences in the educational success of minority groups are also confounded by differences in the average SES level of minority and white families.[18] The rest of this section summarizes the changes in SES factors, which include family income, poverty rates, and parents' education level.

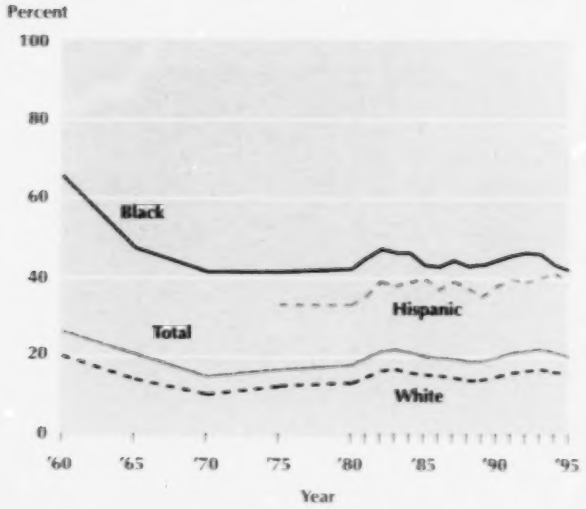
- **Although median family income has increased substantially since 1950, there has been little gain since 1970. Median family income in black and Hispanic households remains at about 60 percent of income in white households.**

Median family income, in constant dollars, increased substantially between 1950 and 1970; however, median family income showed no real gains in the 1970s, a modest increase during the 1980s, and a decline between 1989 and 1993.[19] Income in black and Hispanic households remains much less than that in white households. In 1993, the median family income for whites was $39,300, compared to $24,542 for blacks and $23,654 for Hispanics. These income differences by race/ethnicity are also evident in poverty rates.

- **In 1995, both black and Hispanic children were more than twice as likely as white children to live in poverty.**

The proportion of children under 18 who lived in families with incomes below the poverty level decreased substantially during the 1960s and then rose from 1970 to 1983. Between 1983 and 1995, the poverty rate for children fluctuated between 19 and 22 percent. Throughout the period, minority children were more likely to live in poverty than white children. In 1995, both black and Hispanic children (42 and 39 percent, respectively) were more than twice as likely as white children (16 percent) to live in poverty. Children living with two married parents were also much less likely to live below the poverty level than children living only with their mother (6 percent of children compared to 32 percent).[20]

Percentage of children less than 18 years old who lived in families with incomes below the poverty level: Selected years 1960–95



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-60, "Income, Poverty, and Valuation of Non-cash Benefits: 1994" (based on March Current Population Surveys); and Bureau of the Census, *Current Population Reports*, P60-194, *Poverty in the United States: 1995*, 1996.

- **Poverty rates are much higher in the United States than in many other industrialized countries.**

The percentage of children living below the poverty line, adjusted for the impact of taxes and governmental transfers on income, suggests how effective government fiscal policies are at reducing income inequalities and poverty in a society. Among countries with data available, the United States was the only wealthy industrialized country to have double-digit child poverty rates (20.4 percent in 1986) after adjusting for taxes and governmental transfers.[21] The post-transfer poverty rates for children in the United States were between two and seven times higher than

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Percentage of children (aged 17 or younger) whose family income is below 40 percent of adjusted median family income, by tax and transfer status and country

G-7 Country	Year	Before transfer	After transfer
Canada	1987	15.7	9.3
France	1984	21.1	4.6
West Germany (former)	1984	8.4	2.8
United Kingdom	1986	27.9	7.4
United States	**1986**	**22.3**	**20.4**

NOTE: No data were available for Italy and Japan.

SOURCE: NCES, *Educational Indicators: An International Perspective*, 1996, Indicator 35.

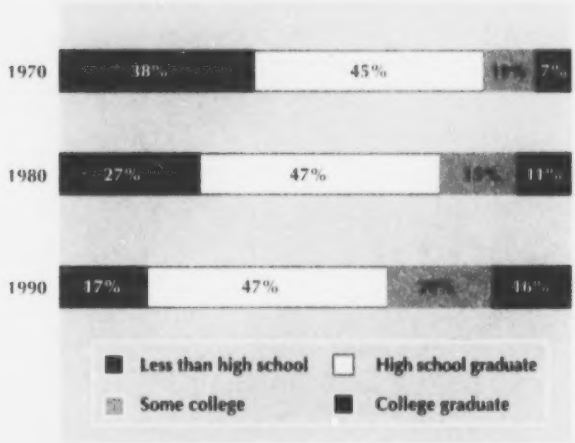
comparable rates in Canada, France, former West Germany, and the United Kingdom.

Parents' education levels are strongly associated with family income levels. Disentangling the separate effects of parents' education and family income on children's education is extremely difficult. Both are, in fact, often used as proxies for SES. Independent of income, however, parents' level of education may influence the value that parents place on education, which in turn can influence their children's educational attainment.[22] While median family income has been relatively stagnant (in constant dollars) since 1970, the average education level of parents has been increasing. Changes in parents' education levels may be an indicator of changes in families' ability to support and promote education for their children.

- **Parents' education levels have increased dramatically since 1970.**

The average education level of parents has continued to increase. For example, the percentage of fathers with less than a high school education declined from 43 percent in 1970 to 19 percent

Percentage distribution of the highest education level of mothers with children aged 15–18: 1970, 1980, and 1990



SOURCE: RAND, *Student Achievement and the Changing American Family*, 1994.

in 1990. Over the same 20-year period, the percentage of fathers with a bachelor's degree or higher increased from 13 to 23 percent. The percentage of mothers with less than a high school diploma declined from 38 to 17 percent between 1970 and 1990, while the percentage with a bachelor's degree or higher doubled.[23] There is some evidence that this increase has had an impact on student performance. A recent study on family characteristics and test scores found that parents' education was the family characteristic most strongly related to student achievement.[24]

- **Parents' level of education remains higher for white children than for black or Hispanic children.**

Although the average highest education level of parents has increased considerably, black and Hispanic children remain more likely than white children to have parents who did not graduate

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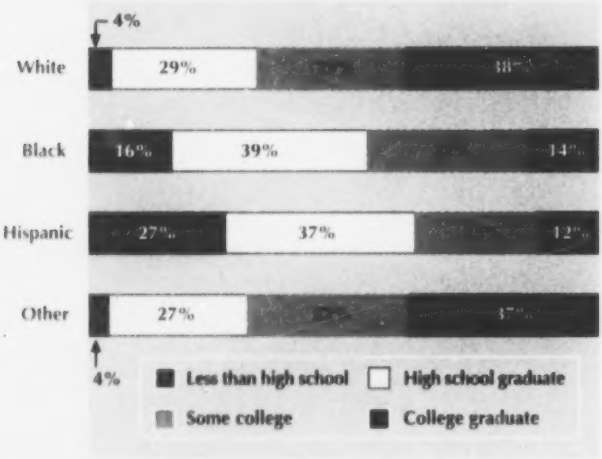
from high school and are less likely than white children to have parents who graduated from college. For example, in 1995, 16 percent of black and 27 percent of Hispanic children aged 3–5 had parents who had not completed high school, compared to 4 percent of their white counterparts.

Percentage distribution of the highest education level of parents with children aged 3–5, by race/ethnicity: 1995



SOURCE: NCES, National Household Education Survey, 1995.

Family Structure

The definition of a "family" has changed greatly in the past three decades. Today children may live in a variety of family structures. For example, in 1995, 25 percent of children aged 6–8 lived with a single parent, 3 percent lived with other relatives, and 64 percent lived with two biological or adoptive parents.

Different family structures are associated with different educational outcomes, even though the effects of family structure are likely to be confounded by family income, parents' education

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level, race/ethnicity, and the amount of time that parents participate in their children's education.[25] Because different family structures are associated with different educational outcomes, it is important to examine how the structure of families has changed over time.

Percentage distribution of children from birth to age 8, by family structure: 1995

Family structure	Birth to age 2	Aged 3–5	Aged 6–8
Total	**100.0**	**100.0**	**100.0**
Two biological or adoptive parents	72.4	67.0	64.0
One biological or adoptive parent	24.2	25.7	25.3
One biological and one stepparent	1.3	4.7	7.8
Other relatives	2.0	2.7	2.9

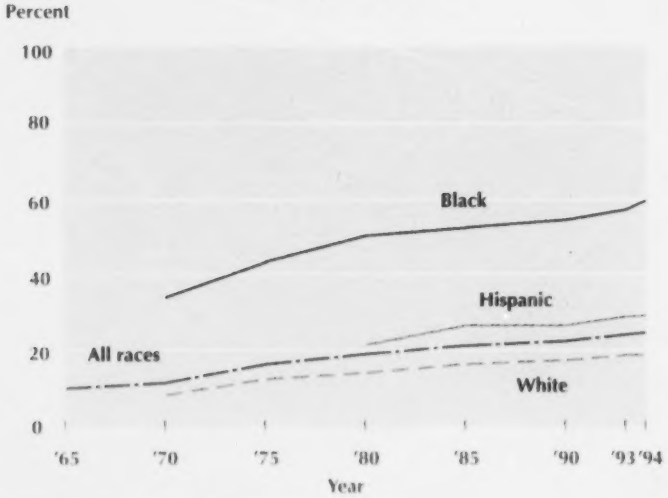
NOTE: Details may not add to totals due to rounding.

SOURCE: NCES, National Household Education Survey, 1995.

- **The proportion of children living in single parent families has more than doubled since 1970. In 1994, black children were three times more likely than white children to live in a single parent family.**

The proportion of children living in single parent families increased sharply during the 1970s and continued to rise slowly through the early 1990s. In 1994, 25 percent of children under age 18 lived in single parent families, while 11 percent did so in 1970. Between 1970 and 1994, the percentage of black children living in a single parent family nearly doubled. In 1994, 60 percent of black children lived in single parent families compared to 19 percent of white children and 29 percent of Hispanic children.[26]

Percentage of children under age 18 living in single parent families, by race/ethnicity of family householder: Selected years: 1965–94



SOURCE: NCES, *Youth Indicators 1996*, Indicator II.

Social Context of Public Schools

An analysis of the social context of education cannot be complete unless it also examines differences in the schooling environment across low and high poverty schools.[27] Research has shown that student performance is strongly related to the educational backgrounds and aspirations of other students in the school.[28] This context or composition effect has been found to be particularly strong for low income students. For example, low income students in schools with small concentrations of such students have higher achievement and graduation rates than their counterparts in schools with high concentrations of low income students.[29]

The percentage of students receiving free or reduced-price lunches in school is the most widely available and comparable measure

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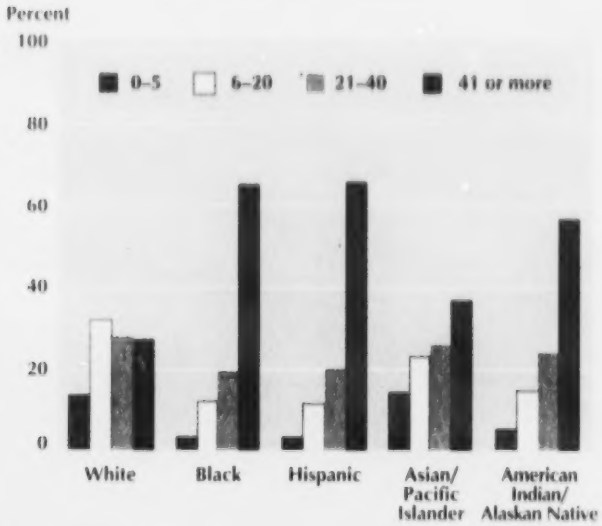
of school poverty concentration.[30] For the purpose of this essay, "low poverty" is a term used to describe public schools in which 5 percent or fewer of the students are eligible to receive free or reduced-price lunches, and "high poverty" is used to describe public schools in which more than 40 percent of students are eligible to receive free or reduced-price lunches.

- **Minority students are more likely than white students to attend high poverty schools.**

Differences in climate or in the distribution of resources between high and low poverty schools have a disproportionate impact on minorities, as racial/ethnic minorities are far more likely to attend high poverty schools. In the 1993–94 school year, 27 per-

Percentage distribution of students, by percentage of students eligible for free or reduced-price lunch in public schools: School year 1993–94



SOURCE: NCES, Schools and Staffing Survey, 1993–94.

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cent of white students were in schools with a high poverty rate compared to 65 percent of black and Hispanic students, 37 percent of Asian/Pacific Islander students, and 57 percent of American Indian/Alaskan Native students.

Systematic differences in the learning environment and the level of financial and human resources between high and low poverty schools can adversely affect the equality of educational opportunities, especially for many minority children. The remainder of this essay will examine differences in these educational opportunities between high and low poverty public schools.

Learning Environment in High and Low Poverty Schools

Differences in how teachers in high and low poverty schools perceive conditions in their schools may reflect differences in the learning environment in which education takes place in those schools.

- **Public school teachers in high poverty schools are more likely to report that student misbehavior interferes with their teaching than are teachers in low poverty schools.**

In the 1993–94 school year, public school teachers from high poverty schools were less likely to be satisfied with their school conditions than were teachers from low poverty schools.[31] For example, teachers in high poverty schools were more likely than their counterparts in low poverty schools to report that student misbehavior (e.g., noise, horseplay, or fighting in the halls, cafeteria, or student lounge) in their school interfered with their teaching (18 and 8 percent, respectively). Teachers in high and low poverty schools were about equally likely, however, to agree strongly that their principal enforced school rules for student

conduct and backed them up when they needed it and that there was a great deal of cooperative effort among the staff members in their school.

Public school teachers' perceptions and attitudes toward teaching, by percentage of students eligible for free or reduced-price lunch: School year 1993–94

	Percentage of students eligible for free or reduced-price lunch			
Perceptions and attitudes	0–5	6–20	21–40	41 or more
Percentage of teachers who strongly agree with the following:				
My principal enforces school rules for student conduct and backs me up when I need it	43.0	44.3	48.8	46.4
There is a great deal of cooperative effort among the staff members	32.7	33.5	34.8	34.3
Necessary materials are available as needed by the staff	38.8	34.4	33.6	29.6
The level of student misbehavior in this school interferes with my teaching	8.2	10.3	13.1	18.3

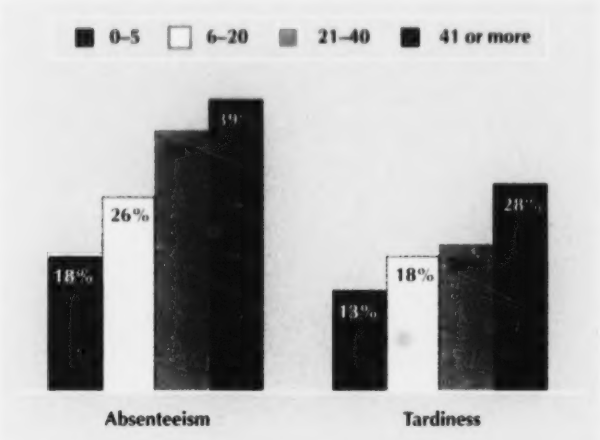
SOURCE: NCES, Schools and Staffing Survey, 1993–94.

- **Public secondary teachers in high poverty schools are more likely to report that student absenteeism and tardiness are serious problems in their schools than public secondary teachers in low poverty schools.**

An important aspect of student access to education is the amount of time students actually spend in the classroom. When students

are absent from school, arrive late, or cut class, they forgo their opportunities to learn. Furthermore, when students disrupt classes by being late or absent, they interfere with lessons in progress and with other students' opportunity to learn. In the 1990–91 school year, the reported percentage of secondary students absent on a typical day was higher in high poverty public schools (10 percent) than in low poverty public schools (7 percent). Secondary teachers in high poverty schools were more than twice as likely as secondary teachers in low poverty public schools to report that student absenteeism and tardiness were serious problems in their schools.[32]

Percentage of public high school teachers who reported that absenteeism or tardiness was a serious problem in their school, by percentage of students eligible for free or reduced-price lunch: School year 1993–94



SOURCE: NCES, Schools and Staffing Survey, 1993–94 (Teacher and School Questionnaires).

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- **Teachers in high poverty public schools are more likely than their counterparts in low poverty public schools to report that lack of parental involvement is a serious problem in their school.**

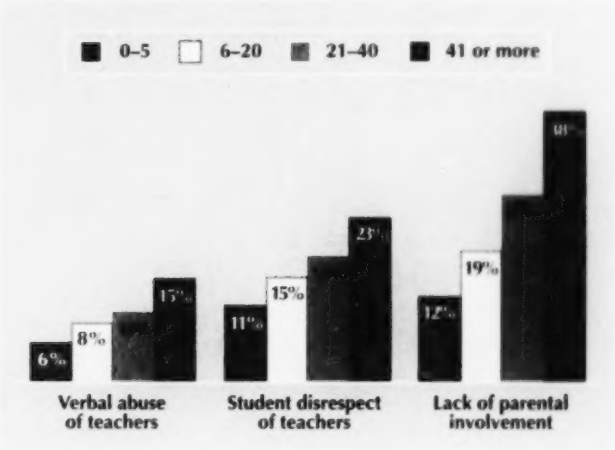
When school personnel and parents communicate, they can mutually establish a stronger learning environment for the student both at home and at school. In the 1993–94 school year, public school teachers from high poverty schools were three times more likely than their counterparts in low poverty schools to report that lack of parental involvement was a serious problem in their schools (38 compared to 12 percent).

Teachers in high poverty schools may be making less of an effort to reach out to parents, however. In 1992, parents of seniors in high poverty schools were less likely than their counterparts in low poverty schools to be contacted regarding their child's academic performance, academic program, or post-high school plans. They were also less likely to be asked to volunteer time at the school. There was no measurable difference in school-teacher contacts with parents regarding the student's attendance or behavior, however.[33]

- **Teachers in high poverty public schools are more likely than teachers in low poverty public schools to report that verbal abuse of teachers and student disrespect of teachers are serious problems in their schools.**

Frequent negative interactions between students and teachers are an indicator of a school environment that is less conducive to learning. In the 1993–94 school year, public school teachers in high poverty schools were more than twice as likely to report that verbal abuse and student disrespect for teachers were serious problems at their school than their counterparts in low poverty schools.

Percentage of public school teachers who reported selected problems were serious, by percentage of students eligible for free or reduced-price lunch: School year 1993–94



SOURCE: NCES, Schools and Staffing Survey, 1993–94.

- **An increasing percentage of public school teachers report that physical conflicts and weapons possession are moderate or serious problems in their schools.**

There has been an increase in the percentage of public school teachers who, between the 1987–88 and 1993–94 school years, felt that physical conflicts and weapons possession were moderate or serious problems in their schools.[34] This concern is reflected in the views of students as well as teachers. In 1993, 50 percent of students reported using some sort of strategy to avoid harm at schools. Black and Hispanic students were more likely to have reported using such a strategy than were white students.[35]

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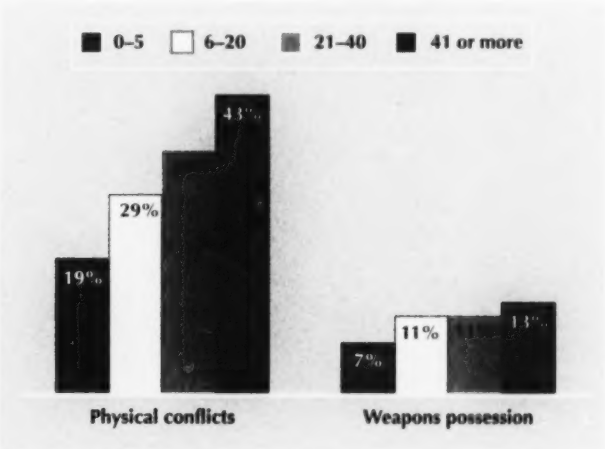
- **Public school teachers in high poverty schools are more likely than teachers in low poverty schools to report that physical conflicts and weapons possession are moderate or serious problems in their schools.**

In the 1993–94 school year, 43 percent of public school teachers in high poverty schools reported that physical conflicts among students were a moderate or serious problem in their schools; this was more than twice the percentage of their counterparts in low poverty schools who reported that physical conflicts were a moderate or serious problem (19 percent). Thirteen percent of public

Percentage of public school teachers reporting physical conflicts among students and weapons possession as moderate or serious problems in their schools, by percentage of students eligible for free or reduced-price lunch: School year 1993–94



SOURCE: NCES, Schools and Staffing Survey, 1993–94.

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school teachers in high poverty schools reported that weapons possession was a moderate or serious problem in their school, compared to 7 percent of teachers in low poverty schools.

Resource Equity Across High and Low Poverty Schools

Equity concerns typically focus on the fairness of how financial and human resources are allocated across schools. Equity can be measured across several types of resources, including differences in programs and services offered, levels of teacher qualifications and experience, teacher salaries, average class size, and expenditures per student. Equity in financial and human resources between schools with high and low poverty levels is one aspect of providing equal educational opportunities to all students.

- **Fourth-graders in high poverty public schools are less likely to be in schools with gifted and talented programs or extended day programs than fourth-graders in low poverty schools.**

The programs and services that a particular school offers are a function not only of the needs of the students, but also of the resources available to that school. Differences in offerings across school poverty levels provide information as to how educational resources are being deployed.

In the 1993–94 school year, fourth-graders enrolled in low poverty public schools were more likely to have programs for the gifted and talented, diagnostic and prescriptive services, and extended day programs in their schools than fourth-graders in high poverty public schools. Fourth-graders in high poverty public schools were more likely, however, to have bilingual education programs offered in their schools than fourth-graders in low poverty schools.

Percentage of fourth-grade students in public schools offering various programs and services, by percentage of students receiving free or reduced-price lunch: School year 1993–94

School poverty level	Bilingual education	English as a second language	Programs for the gifted and talented	Diagnostic and prescriptive services	Extended day
Total fourth-graders	**23.2**	**51.9**	**77.9**	**82.7**	**40.8**
Percentage of students receiving free or reduced-price lunch					
0–5	14.0	59.6	83.3	87.6	58.5
6–20	7.5	51.1	82.2	83.7	42.6
21–40	18.6	47.7	79.9	83.9	39.3
41 or more	36.6	53.8	74.8	80.9	38.7

SOURCE: NCES, Schools and Staffing Survey, 1993–94.

- **Students in mathematics classes in low poverty public secondary schools are more likely to be taught by teachers who majored or minored in mathematics than were students in high poverty public secondary schools.**

Concern about the quality of education in the United States has focused interest on teacher qualifications and student exposure to well-qualified teachers, especially in mathematics and science. Educational background is one measure of teacher qualifications. One indicator of teachers' substantive and academic qualifications is whether or not they majored or minored in the fields they teach.

The differences in teacher qualifications shown by school poverty levels are not uniform across subjects. For example, there is a 9 percentage point difference in the percentage of students taught mathematics by a teacher with a major or minor in mathematics between high and low poverty schools. There is no measurable

difference in the percentage of students taught science by a teacher who majored or minored in a science subject between high and low poverty schools. Differences exist, however, within specific science subjects; students in high poverty schools were less likely than students in low poverty schools to be taught chemistry by a teacher who majored or minored in chemistry (63 and 77 percent, respectively) or to be taught physics by a teacher who majored or minored in physics (29 and 43 percent, respectively).[30]

Percentage of public secondary mathematics and science students taught by teachers with a major or minor in the class subject, by percentage of students eligible for free or reduced-price lunch: School year 1993–94

	Percentage of students eligible for free or reduced-price lunch			
Subject	0–5	6–20	21–40	41 or more
Mathematics	83.3	79.7	76.1	74.1
Total science*	92.0	90.1	91.5	86.5
Biology	80.9	73.5	75.7	72.7
Chemistry	77.2	64.8	72.1	62.9
Physics	42.8	50.5	39.3	29.3

*It is easier to have majored, minored, or to have become certified in "science" than in a specific discipline, such as biology, because a teacher from any scientific field may qualify in "science," whereas qualifying in a specific discipline requires a match in class subject matter.

SOURCE: NCES, Schools and Staffing Survey, 1993–94 (Teacher Questionnaire).

- **Public schools with high levels of students in poverty are less likely to be connected to the Internet than schools with lower levels of student poverty.**

Access to the Internet is one indicator of a school's connection to the "Information Superhighway." In 1996, Internet access was available in about half (53 percent) of the schools in which 71 per-

cent or more students were eligible for free or reduced-price lunch programs and in 58 percent of schools in which 31 to 70 percent of students were eligible. In comparison, 72 percent of schools with 11 to 30 percent of students eligible for the lunch program had Internet access, and 78 percent of those with less than 11 percent of students with free or reduced-price lunch eligibility were connected to the Internet.[37]

- **Teacher salaries are higher in low poverty public schools than they are in high poverty public schools.**

Teacher salaries are an important way for schools to attract and retain high quality teachers. In the 1993–94 school year, public school teachers in low poverty schools earned 28 percent more in total school earnings than did public school teachers in high poverty schools ($45,547 versus $35,496, respectively).[38] Teachers in high poverty schools were also less likely to be satisfied with their salaries than teachers in low poverty schools.[39]

- **The average class size of public school teachers is similar across all levels of school poverty.**

Class size is a measure of the average number of students a teacher sees during a class period or school day. Smaller class sizes are valued because they may allow students to receive more individual attention from their teachers and may reduce the teacher's burden of managing large numbers of students and their work. In the 1993–94 school year, the average class size was similar in high and low poverty public schools.[40]

- **Relatively low wealth public school districts spend less per pupil in general and less on capital investment than do school districts with more wealth.**

Public elementary and secondary spending can be divided into three main functional areas: instruction, support services, and capital outlay. Many factors influence how school districts spend the funds that they receive, including the overall level of funding, the organizational structure of the district; district- and state-level goals; differences in student needs (e.g., demand for special education services and programs for limited-English-proficient students); and the relative cost of educational resources (e.g., teacher salaries, building maintenance, or construction cost for new schools). The distribution of expenditures across functional areas is an indication of how different public school systems allocate funds to meet their specific needs.

In the 1992–93 school year, relatively low wealth school districts (those with a median household income of less than $20,000) spent less per student than districts with more wealth (those with a median household income of $35,000 or more). Relatively low wealth districts also spent 31 percent less per student on capital investment ($434 per student) than relatively high wealth districts ($630 per student).[41]

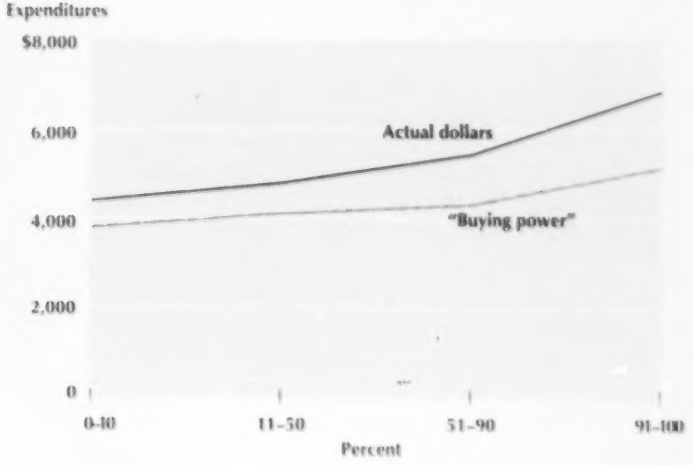
- **Adjusting education expenditures to reflect differences in the relative cost of providing education services reduces the spending gap between districts with high and low income households.**

"Buying power" is a concept used as an alternative measure of expenditures. Actual dollars spent per student can be adjusted to reflect differences in the cost of living and differences in the educational needs of students. The cost of living adjustment reflects

the fact that a dollar spent in New York City buys substantially less in actual education resources than a dollar spent in Des Moines, Iowa. The needs adjustment takes into account expenditure differences that result from the additional resources required to provide an education to students who need special education, bilingual, and compensatory education services.[42]

Disparities in public education spending are most pronounced at the extremes of district wealth (measured by median household incomes). For example, in 1989–90, the Nation's richest school districts spent 56 percent more per student than the Nation's poorest districts. These differences in expenditures per student are reduced to 36 percent, however, when "buying power" is taken into account.[43]

Public education expenditures per student, by percentage distribution of median household income of households located within district boundaries: 1989–90



SOURCE: NCES, *Do Rich and Poor Districts Spend Alike?*, 1996.

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Summary

The social context of education has changed over the past few decades. The structure of families is shifting away from two biological parent families. The percentage of children from minority backgrounds is increasing, as is the percentage of children who have difficulty speaking English. Over the past 25 years, median family income has been relatively stagnant, and the poverty rate has changed very little. Black and Hispanic children remain much more likely than white children to be living in poverty, a factor associated with poor school outcomes. On the positive side, today children live in households with more educated parents than they did a few decades ago and parents' education level is a strong predictor of student achievement.

Minority students are more likely to attend schools with a high level of poverty. This is significant since in many ways the climate in high poverty schools appears to be less conducive to learning than that in low poverty schools. Similarly, high poverty schools are, on average, worse off than low poverty schools with regard to human and financial resources.

The social context in which schools operate can influence their effectiveness. Changes in social context present challenges that schools must address to enhance their effectiveness and ensure that education progress can occur.

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[8]Ibid., 208, based on NCES, National Household Education Survey (NHES), 1995 (Early Childhood Program Participation File).

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[10]Ibid., 242, based on NCES, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994*, 1996.

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[12]Ibid., 210, based on U.S. Department of Commerce, Bureau of the Census, October Current Population Surveys, 1995.

[13]Low income is the bottom 20 percent of all family incomes, high income is the top 20 percent of all family incomes, and middle income is the 60 percent in between.

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